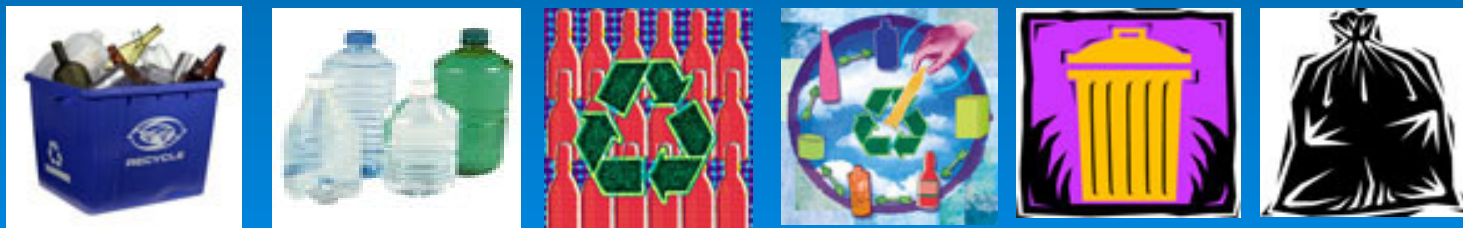




Thailand's 3Rs Strategy



Sunee Piyapanpong

**Director of Waste and Hazardous Substance Management Bureau
Pollution Control Department
Ministry of Natural Resources and Environment
Thailand**



Municipal Solid Waste Management (As of 2008): Generation, Collection, Recovery, and Disposal

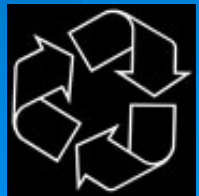


Generated 100%



15.04 Million Tons

Potential
Recyclable/Utilized 80%



12.04 million Tons

Collected 86%



12.94 Million Tons

Recycled 22%
From recovery activities:
Garbage Banks,
Municipal Collectors,
junk shops

Recyclable

30%

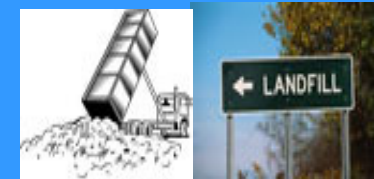
Improper
Disposed 63 %

3.3 Million Tons



Open Dump Sites
Open Burning
8.16 Million Tons

Control/Sanitary
Disposed 37%



4.78 Million Tons



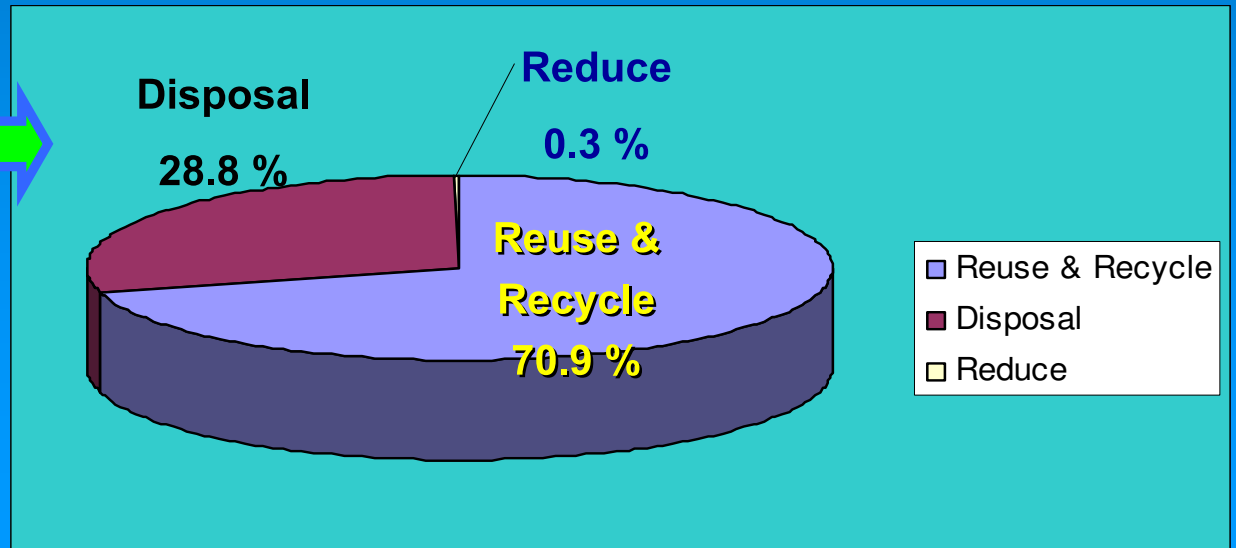
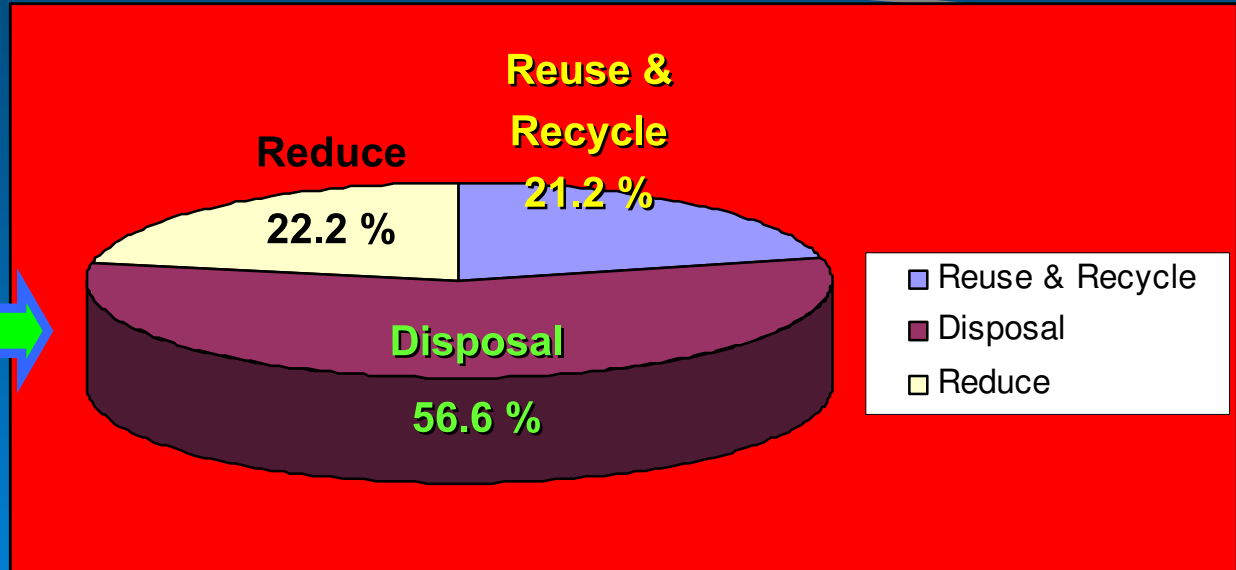
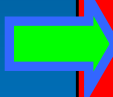
Industrial Waste Management



Industrial Waste
10.244 MT

Hazardous Waste
1.559 MT (18.05 %)

Non-hazardous Waste
8.685 MT
(81.95 %)





Waste Management Policy

Internal Factors

- Socio-economic development
- Government policy
- Resource and energy conservation
- Pollution status

External Factors

- International agreements
- Trade and environment
- International standards
- Global environmental problems

National Policy on Waste Management

3Rs Promotions

Integrated Technology

Clustering Management

Public Private Partnership

Waste-to-Energy



National 3Rs Strategy

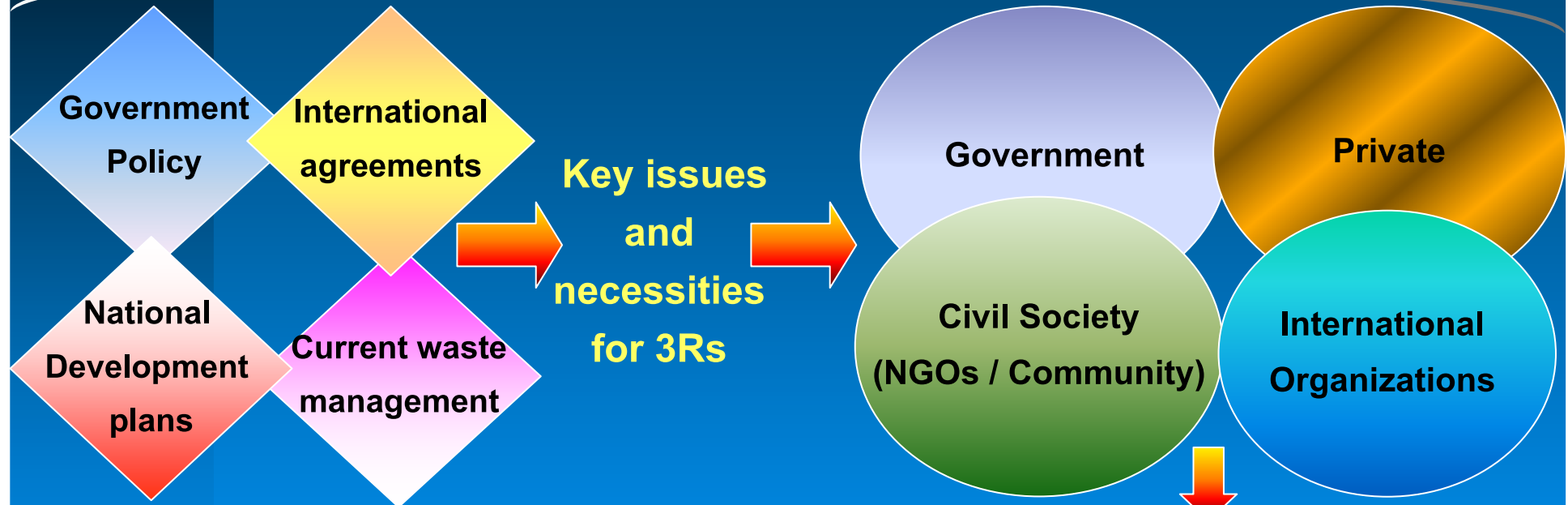


- **National 3Rs Strategy Development**
 - **Supported by UNEP RRC.AP under Advance Waste Management in Asia and the Pacific (AWMAP)**
 - **Objective : To develop national 3R policy, goal and strategies as a direction of environmental sound management of wastes for all stakeholders**
 - **3Rs strategy: Apply various principles and measures of waste management to all processes of waste generation such as production, distribution, consumption, waste recycling, treatment and disposal.**



3Rs Development Process

Working group



Factors

Draft National 3Rs Strategy

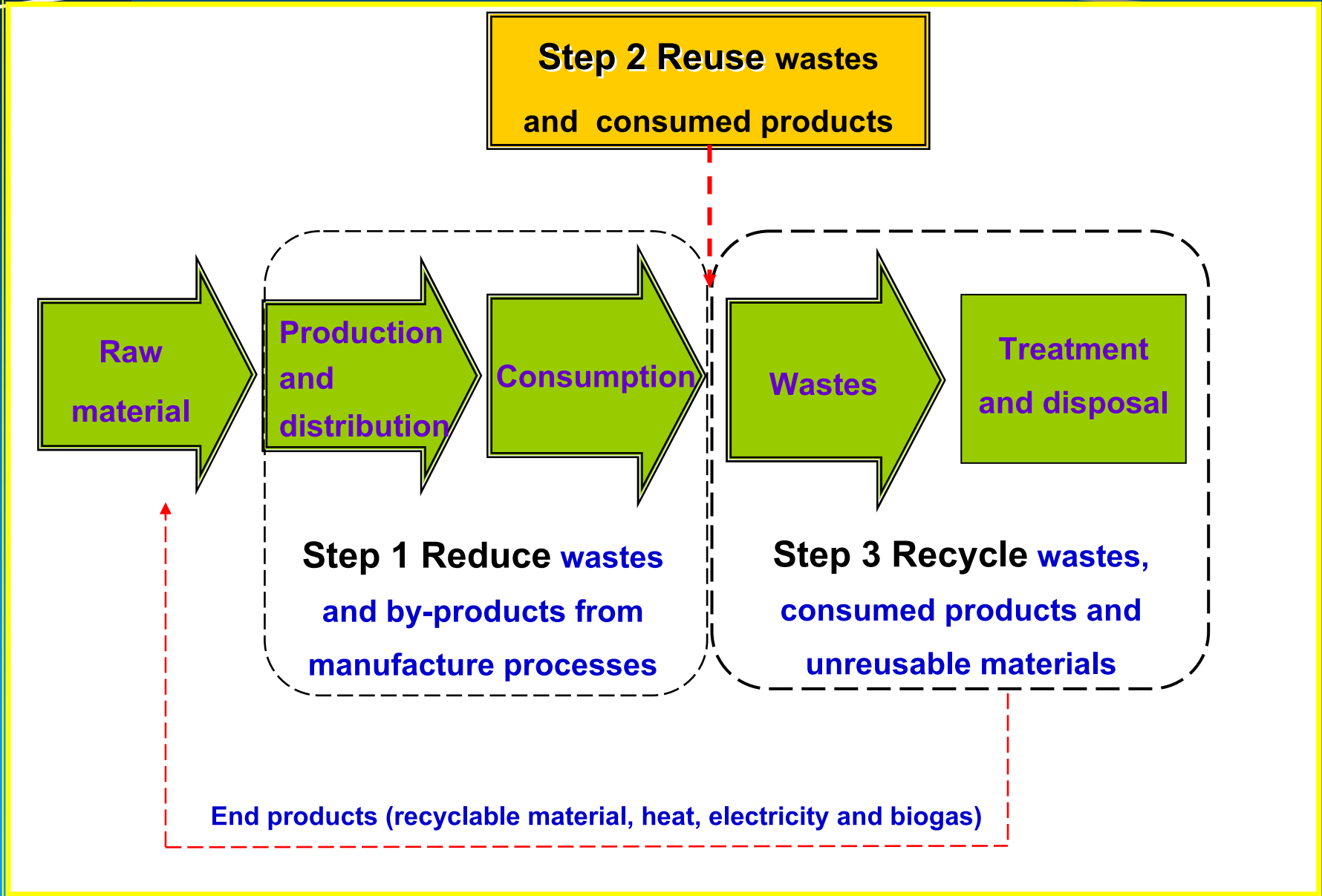
- Objective and goal
- Strategies: Resource efficiency, sustainable consumptions, 3Rs promotions, proper treatment and disposal
- 3Rs measures and action plan (target year by 2020)

National 3Rs Plan Approval

Experts and technical meeting



National 3Rs Principle





National 3Rs Strategies



- **Resource efficiency**: Control of waste generation, promote use of reusable and recyclable parts or wastes in production and distribution processes.
- **Sustainable consumption**: Awareness rising promotion for green products, and public participation to reduce wastes at sources
- **3Rs Promotions**: Promote recycling business, household waste separation, waste to energy applications and community recycling programs
- **Proper disposal**: Develop best practices and best available technologies for management of waste residues



National 3Rs Programs



Production

- Waste reduction programs (Eco-design/CT/CP/environmental labels)
- Promote reuse and recycling of wastes and recyclable materials
- Promote production of eco-friendly products

Distribution and Consumption

- Promote recycling-oriented society
- Promote use of green products
- Promote separation and take-back programs

Recycling, Treatment and Disposal

- Support community-based recycling activities
- Capacity building on 3Rs and waste management
- Promote public private partnership programs
- Promote waste recycling business
- Standard and guideline for waste disposal



3Rs Ultimate Goal



Recycling-oriented Society

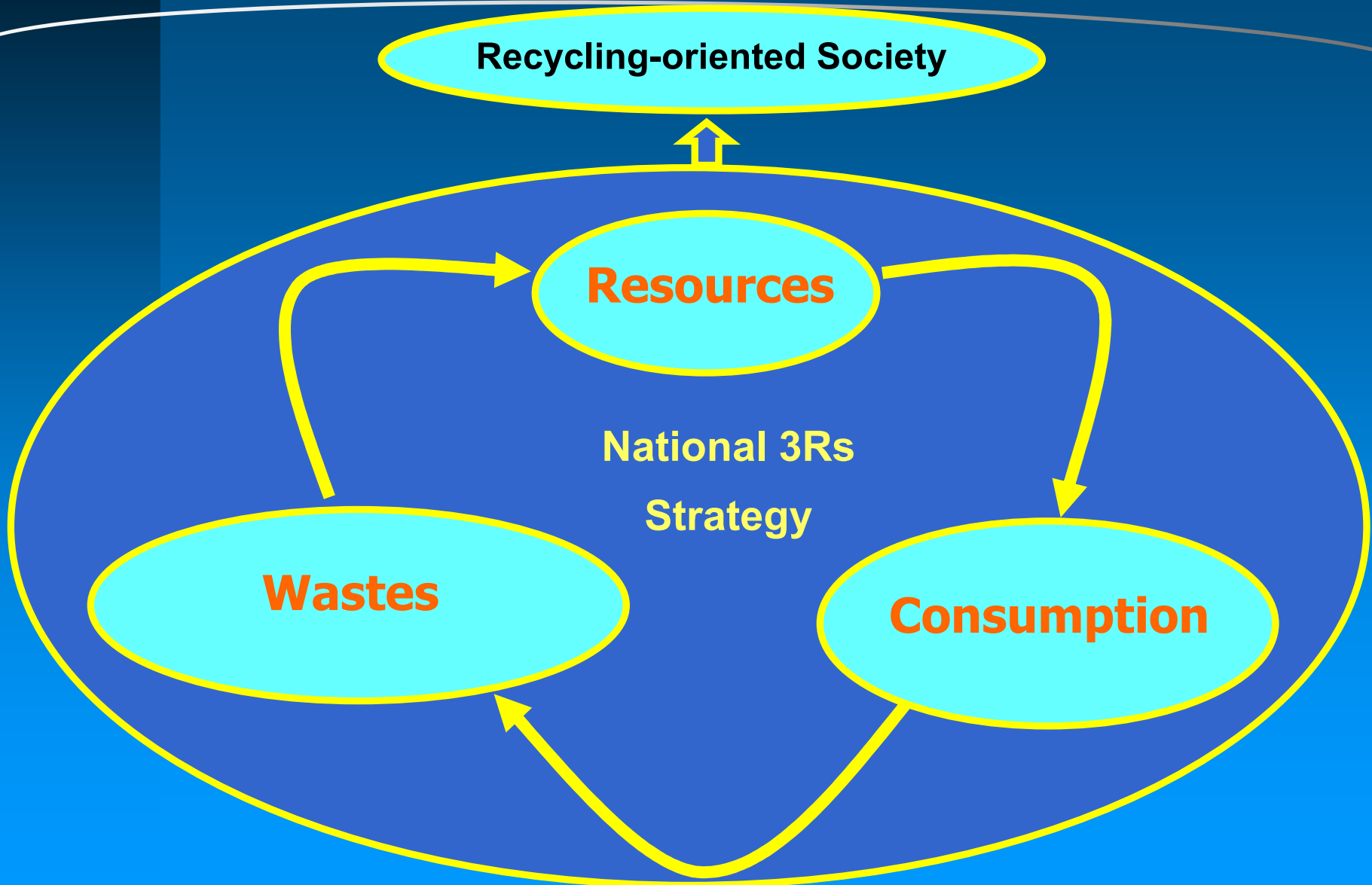


Resources

National 3Rs
Strategy

Wastes

Consumption





3Rs Implementations



Short term (1-3 years)

- Policy statement and announcement
- Awareness rising
- R&D on 3Rs (CT/CP/Eco-design, recycling)
- Promotion for recycling business (BOI, SME Bank, Environmental Fund)
- Capacity building
- International cooperation



3Rs Implementations



Medium term (3-5 years)

- ❖ Introduce integrated waste management system in major cities
- ❖ Issue technical criteria and guideline
- ❖ Implement pollution prevention (CT/CP/Eco-design)
- ❖ Conduct green products procurement
- ❖ Initiate public private partnership programs



3Rs Implementations



Long term (5-10 years)

- Introduce economic instruments (Tax incentives, funding, subsidy, market mechanism, emission fees, pollution charge)
- Laws and regulations (EPR model, trade-related environment, specific control on flow of materials, resource efficiency and pollution control)



Progress in 3Rs Implementation



• Government Green Procurement

- Lists of green products and services
(19 products and 4 services)
- Guideline and criteria for green procurement
- Capacity building for stakeholders
- Road map for promotion of green procurement

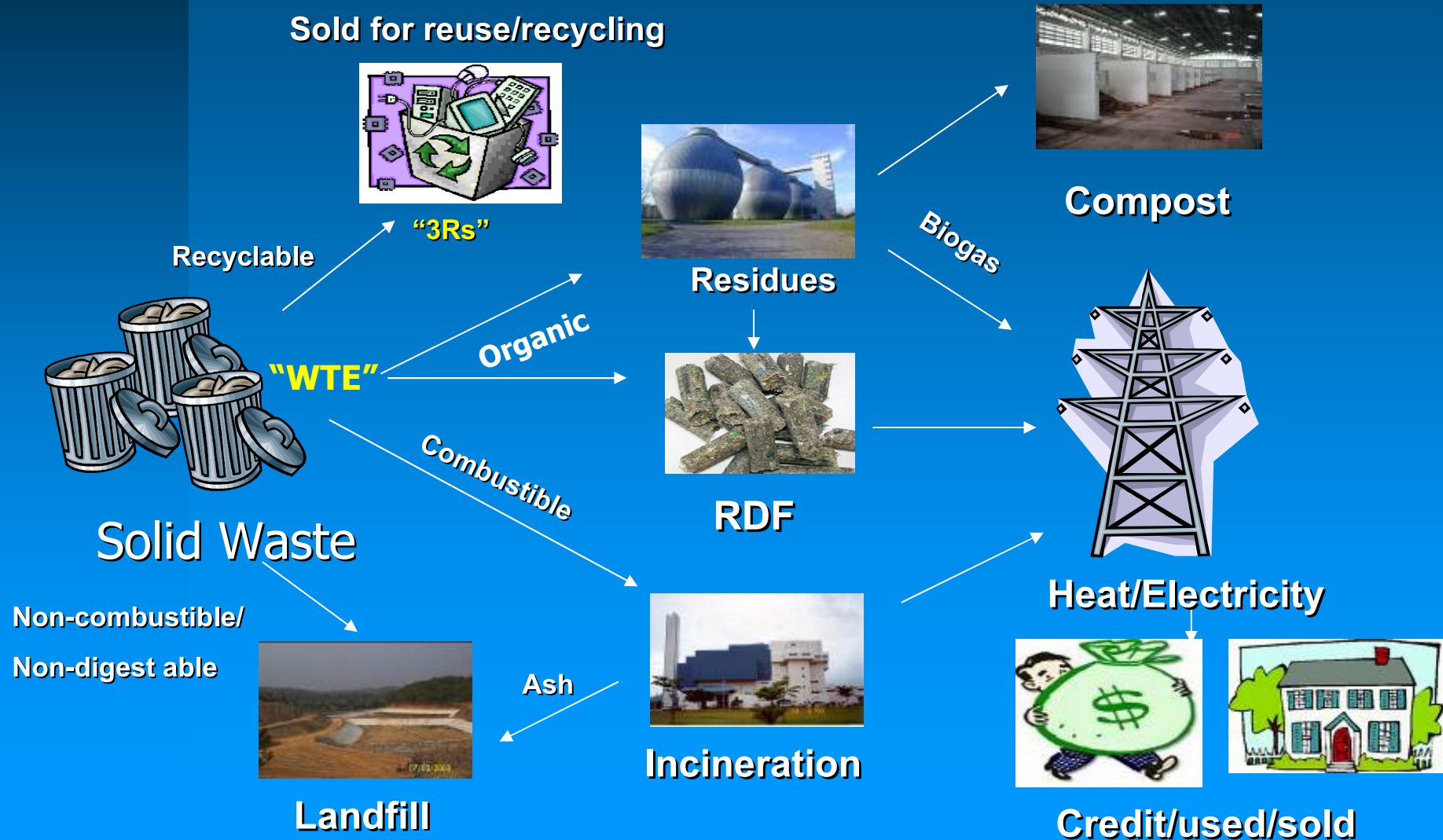




Progress in 3Rs Implementation



• Integrated Waste Management: 3Rs and WTE





Existing Waste-to-Energy Facilities



Operating facilities with total installed-capacity of **5.075 MW**



Phuket incinerator
(2.5 MW)



Biogas from landfill at Rachadeva (950 kW)



Biogas at Rayong municipality (625 kW)



Biogas from landfill at Khampeangsan
(1 MW)



Progress in 3Rs Implementation

3Rs in Industrial sector

- CT/CP applications
- Green purchasing network
- Industrial waste exchange program
- Ministry notification on sorting, storage and 3Rs for waste residues management



- Thailand Green Purchasing Network**
- Promotion on green purchasing network
 - Green purchasing network database



- Material Exchange Center**
- Waste exchange database
 - Promote waste exchange program
 - Monitoring



Progress in 3Rs Implementation

- **Take-back Program for End-of-life Products**

- **Packaging and packaging waste**



- **Mobile phone and batteries**



- **Fluorescent lamp**



- **Used lead-acid batteries and dry cell batteries**





Progress in 3Rs Implementation

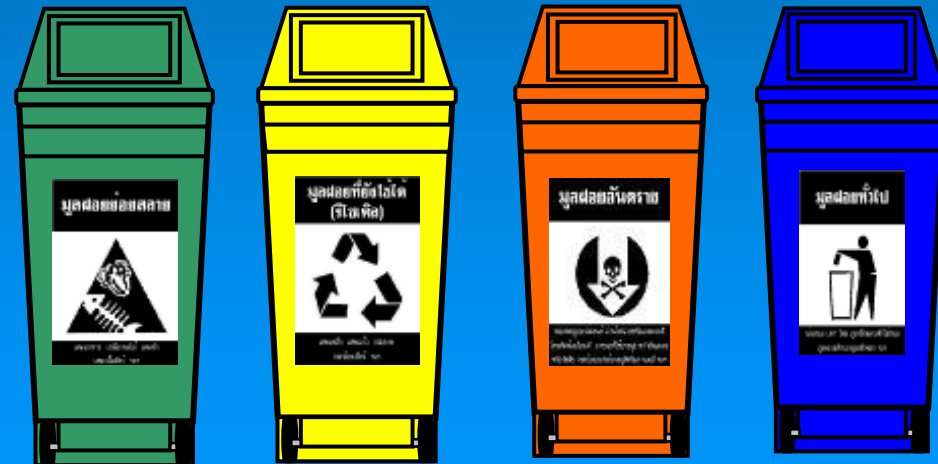


• Capacity Building on 3Rs

- Regional Conference



- Guidelines/manuals



- Waste - specific containers



Progress in 3Rs Implementation

- **Promotion for recycling-oriented society**
 - Over 200 communities implement the 3Rs activities , some municipalities reduce waste up to 30-50%





Progress in 3Rs Implementation



- Strengthen informal sectors on waste business:
Green junkshop projects

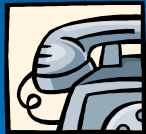




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